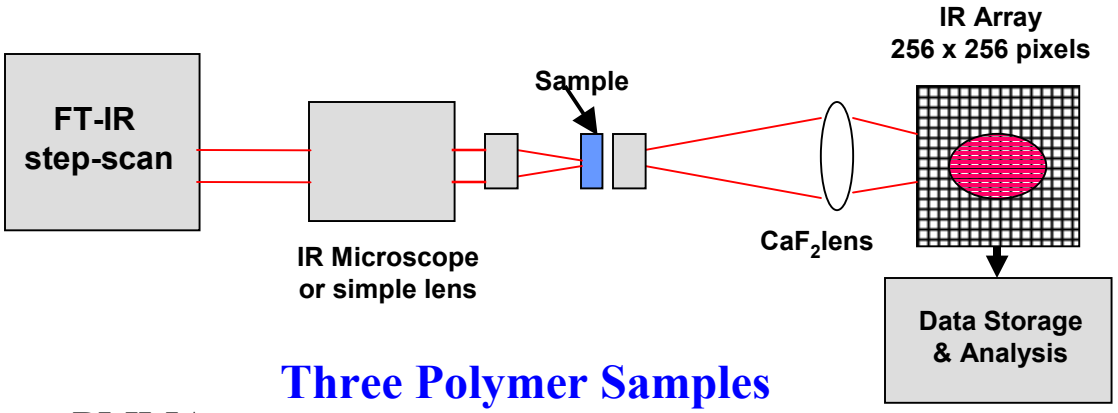
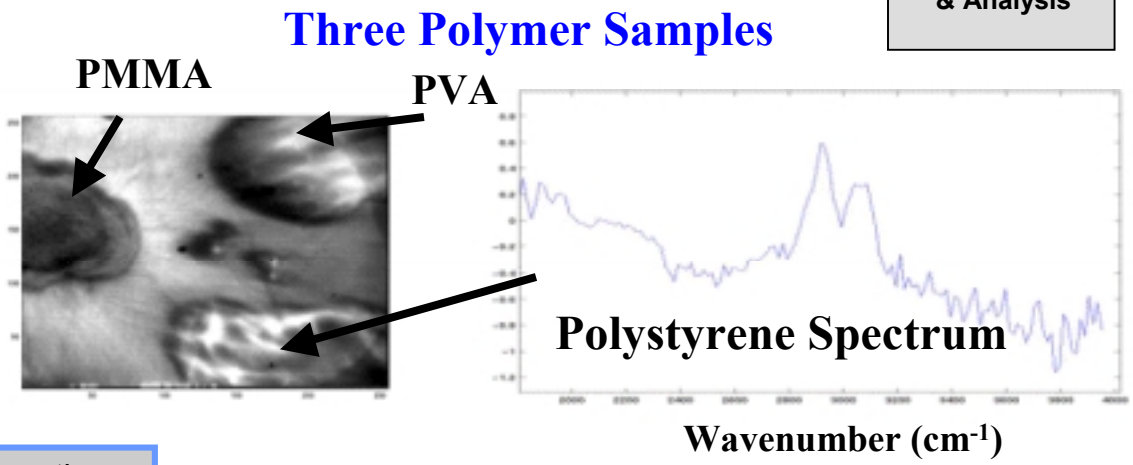
# Infrared chemical imaging

- **Critical Issues**
  - Development of high-throughput screening methods sensitive to chemical composition and spatial dimensions will become important as varying types of combinatorial systems and libraries are generated. Rapid analysis of novel materials, catalysts, polymers, biosystems and related materials amenable to standard FTIR spectroscopic analysis will require infrared imaging methodologies and computer-aided spectral analysis. These areas demand new information, database and data analysis architectures as well as inter-laboratory standards for comparisons and improved confidence of results.
- **Research Strategy**
  - Chemical imaging uses modified step-scan or rapid-scan FTIR benches combined with large-format, two-dimensional infrared focal plane array cameras. We are developing a 256x256 pixel imaging system capable of rapid data acquisition for combinatorial screening. Improvements in data quality and spectral analysis requirements will be explored to quickly assess combinatorial library elements for composition and structural information.
  - Tests on gradient polymer composite films, optical density and spectral standards, and related systems will be conducted to characterize and optimize data acquisition and analysis methods pertinent to anticipated needs for combinatorial screening.




For more information ...

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